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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,241	12/28/2001	Dennis J. O'Rear	005950-753	9990

7590 10/28/2003

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EXAMINER

DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,241

Applicant(s)

O'REAR, DENNIS J.

Examiner

Thuan D. Dang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 11-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

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DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I (claims 1-10) in Paper No. 6 is acknowledged. The traversal is on the ground(s) that no undo burden will be placed on the office by examining all groups of claims together. This is not found persuasive because regardless of whether or not applicant(s) believe no undo burden would exist if all groups are examined together, applicant(s) have not shown that the difference between the two processes proposed by the examiner is not feasible. Therefore, applicant(s) have not shown that the groups are not distinct.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear the percentage of methane is based on weight or mole or volume.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koikeda et al (4,622,308) in view of Olbrich et al (4,502,945) further in *further in view of GB 975,454 (hereinafter GB)*.

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Koikeda discloses a F-T process of converting syn-gas (to a product containing olefins, paraffins, and wax in the presence of a cobalt catalyst (the abstract; col. 1, line 59 thru col. 2, line 6; examples).

It appears that Koikeda does not disclose how the different components of the F-T product, such as wax and heavy components, are further converted to other valuable products, such as C₃₋₅ olefins as called for in step (c) of claim 1 which is then oligomerized to form iso-olefins. However, one having ordinary skill in the art at the time the invention was made has been recognized that the paraffins can be converted to C₃₋₅ olefins in the presence of a intermediate molecular sieve having silica:alumina ratio of 175:1 to about 3000:1 by Paragon process which is disclosed by Olbrich et al.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Koikeda process by converting wax (heavy paraffins) to valuable C₃₋₅ olefins to increase the profit of the Koikeda process.

However, GB discloses that valuable iso-prene of sufficient purity used to produce synthesis rubber can be produced by oligomerizing propylene to 2-methyl pentene-1 and cracking the product to isoprene (page 1, lines 11-71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Koikeda process by converting propylene in the F-T product to a more valuable product by oligomerizing propylene to produce 2-methyl pentene-1 which can be cracked to iso-prene to increase the profit of the process.

In an example, Koikeda discloses a product containing less than 10 wt% methane.

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Regarding claim 8, it is obvious to feed additional C₃₋₅ olefins with the produced olefins if the produced olefin is not enough for the production of gasoline.

It is obvious to distill the product of step (d) to increase the purity of the product.

Regarding claim 9, it would have been obvious to modify the Koikeda process by hydrogenating the isoolefins to isoparaffins if isoparaffin is desired.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koikeda et al (4,622,308) in view of Olbrich et al (4,502,945) further *in further in view of GB 975,454 (hereinafter GB) in view of Kobylinski (4,088,671)*.

Koikeda discloses a process as discussed above.

Koikeda does not disclose a product contain less than 5% and 2% (see the entire patent for details). However, as disclosed by Kobylinski, the produced amount of methane can be controlled (col. 2, lines 3-9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Koikeda process by adding a small amount of ruthenium to the catalyst according to the desired amount of produced methane.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 703-305-2658. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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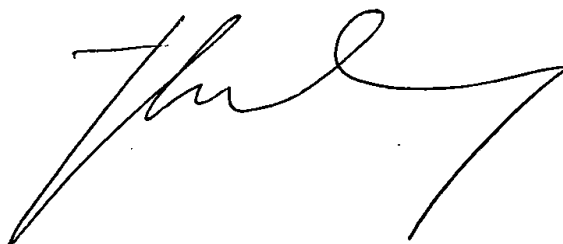
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Thuan D. Dang
Primary Examiner
Art Unit 1764

10034241.1st
September 20, 2003

A handwritten signature in black ink, appearing to read 'Thuan D. Dang', written in a cursive style.